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it is characterized by a uniform black shale with even sedimentation. An hypothesis is advanced to account for this difference and some broad fundamental principles laid down which apply to such problems in general. C. D. Walcott gives a brief description of a new species of *Lingulepis* from the Middle Cambrian, in the Yellowstone Park.

A. W. Duff discusses the secondary undulations of the water surface noted in tidal observations on the Bay of Fundy. At Indiantown, near St. John, New Brunswick, slight fluctuations of level were noted on a calm day, which had a fairly constant period of thirty-five seconds. There was found also a series of larger undulations obtained in the record which had a period of from thirty to forty minutes. Both series ceased at about the same time—about half an hour after high water. In connection with these, the author reviews observations made by various authors on the *seiches*, particularly those of Forel on Lake Geneva. It is shown that Forel's formula gives with fair accuracy the proper period for the secondary undulations, but while the Swiss *seiches* are regarded as connected with the abnormal conditions of the barometer, no such relation appears to exist in the case here described.

S. L. Penfield and H. W. Foote describe a new silicate from Franklin Furnace, N. J., to which they give the name Roebingite, which is remarkable in containing sulphur dioxide (SO_2) and lead.

THE AUK.

THE April number opens with two papers on the spring plumage of the bobolink, respectively by Arthur P. Chadbourne and Frank M. Chapman, the first being illustrated with a colored plate. Dr. Chadbourne describes a case of the change of color in a caged male bobolink to the spring dress without any loss or renewal of feathers, whereupon he claims that 'color change in the individual feather is fact, not theory,' and that "the change to the breeding dress in the male bobolink sometimes takes place without a so-called 'moult.'" Mr. Chapman's paper is to some extent in the nature of a rejoinder to Dr. Chadbourne's, especially in respect to a specimen of a moulting spring bobolink

link from Corumbá, Brazil, which Dr. Chadbourne regards as acquiring the breeding dress partly by moulting and partly by change of color in the feathers themselves, an interpretation, which, Mr. Chapman claims, is quite without basis in fact as regards the feathers alleged to be changing color.

Charles W. Richmond describes ten new species of birds from the Kilimanjaro region of East Africa, collected by Dr. W. L. Abbott; A. W. Anthony describes several new birds from Lower California; W. W. Price describes a new pine grosbeak from California, and Leonhard Stejneger a new guillemot from the Kuril Islands. Harry C. Oberholser discusses at length the characters and relationships of the Western forms of the long-billed marsh wren, describing a new subspecies. William Leon Dawson gives an interesting annotated list of the birds of Okanogan county, Oregon; and A. W. Butler writes of various rare birds occurring in Indiana, including an account of the recent remarkable occurrence of Brünnich's murre far inland.

The department of 'General Notes' includes, as usual, a large number of notes on rare or little known species, and a number of important nomenclatural notes; 'Recent Literature' contains sixteen pages of reviews and notices of recent ornithological publications; 'Correspondence' and 'General Notes' complete the number, which is much larger than usual and is filled with matter of unusually varied interest.

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON—275TH MEETING, SATURDAY, APRIL 10.

DR. THEO. GILL and Mr. C. H. Townsend presented by title, 'Diagnoses of New Species of Deep Sea Fishes.'

Dr. Jonathan Dwight, Jr., under the title, 'A Species of Shearwater (*Puffinus assimilis*, Gould) New to the North American Fauna,' noted the occurrence of this species as a straggler, on Sable Island, on September 1, 1896.

Mr. Sylvester D. Judd spoke on 'Antennal Circulation in Crangonyx.'

Mr. Charles T. Simpson read 'Notes on the Classification of *Unios*,' being a brief sketch of the anatomical work of Lea, Agassiz, Kirtland

and Sterki. The speaker stated that there are two great groups of *Unios* in North America. The first is characterized by different forms of shells and branchiæ in the male and female. The shell of the latter is swollen in the post-basal region, a character wanting in the male, and the outer branchiæ are developed in this region into a marsupium. The shells of this group are generally highly colored, without a ridge on the dorsal slope, not arcuate, have delicate beak sculpture, and the assemblage is no doubt entitled to generic rank, for which the name *Lampsilis*, proposed by Rafinesque and again by Agassiz, may be used.

In the other great group the shells of male and female are essentially alike, being generally dull in color and arcuate in old age, having usually coarse beak sculpture and a posterior ridge. It is not certain that the sexes are always separate. In one subdivision of this group the shells are oval to oblong, and the embryos are contained in the whole of the outer branchiæ; in the other the shells are heavy, short, often tuberculous, and have the embryos generally distributed throughout all four leaves of the branchiæ. This great group is retained in *Unio*, and it is believed that in anatomical characters it closely agrees with the forms of Europe. The Australasian *Unios* are very much like those of South America in shell and anatomical characters and are classed as a separate genus, *Diplodon*. The two naiad faunas may be relics of an older Northern fauna, which was superseded by more modern forms, or it is possible that they may be parts of a Southern fauna that has migrated along a now sunken Antarctic continent.

Mr. Harry C. Oberholser discussed 'the American Golden Warblers,' with particular reference to their geographical distribution. He recognized twenty forms of this difficult group, one-half of which he considered subspecies. The Boreal and Austral regions of North America and Mexico together possess five forms, probably all races of a single species; the Central American subregion of the Neotropical has four; the Columbian subregion four; and the Antillean subregion seven. Various anomalies of distribution were pointed out and commented upon.

Mr. T. Wayland Vaughan gave some 'Notes on a Monograph of the Eocene Corals of the States,' stating that until recently they had not been well understood, although the United States possessed the richest Eocene coral fauna of any country. The original species came almost entirely from the Jackson stage and Lower Claiborne beds, and the material was often so water-worn as to be unrecognizable. Certain genera are well characterized and easily identified; others are so close as to run together. Virginia and Maryland constitute one fauna, containing their own peculiar species; the Gulf States constitute another, while California contains only three species, all endemic. This fauna as a whole belonged to shallow rather than deep water. No species of the American Eocene can be referred to the foreign Eocene.

F. A. LUCAS,
Secretary.

AMERICAN CHEMICAL SOCIETY.

A SPECIAL meeting of the New York section of the American Chemical Society was held at the College of the City of New York on Friday, April 23d. Dr. C. B. Dudley, President of the Society, presided.

Dr. E. K. Dunham, of Carnegie Laboratory, New York, read a paper on 'The Value of Bacteriological Examination of Water.' The discussion was opened by Dr. W. T. Sedgwick, Director of the Biological Laboratory of the Massachusetts Institute of Technology. Dr. J. J. Kinyoun, of the United States Marine Hospital Service; Dr. W. P. Mason, of the Troy Polytechnic Institute; Dr. A. R. Leeds, of Stevens Institute, and others, expressed their views and gave testimony to the independence of chemical and bacteriological methods in the study of water supply.

An important point strongly insisted upon by Dr. Sedgwick is the necessity for a personal investigation of the source from which a sample of water is obtained, and he advises the chemist and bacteriologist to refuse to report without personal investigation of the sources of supply.

DURAND WOODMAN,
Secretary.

ERRATUM: P. 658, col. 1, line 25 for *Mesopithecus* read *Nesopithecus*.